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THE PLANT DISEASE REPORTER

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THE DUTCH ELM DISEASE IN NEW JERSEY AND NEW YORK

R. P. White, Curtis May, and R. Kent Beattie

Up to August 14, 276 trees affected with the Dutch elm disease have been found in 38 New Jersey and 4 New York cities and towns. The presence of the causal fungus, Graphium ulmi, has been determined by cultures made from each suspected tree.

As will be seen from the map (Figure 4) the affected territory includes seven counties in New Jersey and three in New York. In New Jersey, diseased trees have been found in Passaic, Bergen, Hudson, Essex, Union, Middlesex, and Somerset Counties, and in New York at two localities on Staten Island, and on Long Island in Brooklyn and Nassau County.

The total area now known to be affected in New Jersey includes about 200 square miles. The discovery of the disease on Staten and Long Islands will necessitate careful scouting of more than 600 square miles, and cruising over considerable additional territory.

R. Kent Beattie of the Division of Forest Pathology, U. S. Department of Agriculture is at the head of the work on the Dutch elm disease, with Curtis May of the Dutch Elm Disease Laboratory as his associate. O. N. Liming and E. B. Lambert are in charge of the scouting in the New Jersey area assisted by Paul R. Miller, L. R. Fate, P. V. Mock, and N. E. Stevens. L. R. Gill is in charge of the cruising outside of the New Jersey heavily infected area. State Forester C. P. Wilber of New Jersey has furnished four technical men to help in scouting, F. G. Liming, Eugene Lee, Horace Wester, and Cornelius Shear, and he has also supplied twelve enrolled men from one of his Conservation Camps.

The New Jersey Agricultural Experiment Station, the New Jersey State Department of Agriculture, the State Conservation Commission and the New Jersey Shade Tree Commissions are all cooperating in the survey and in the eradication campaign. R. P. White of the Agricultural Experiment Station is devoting most of his time to this work.

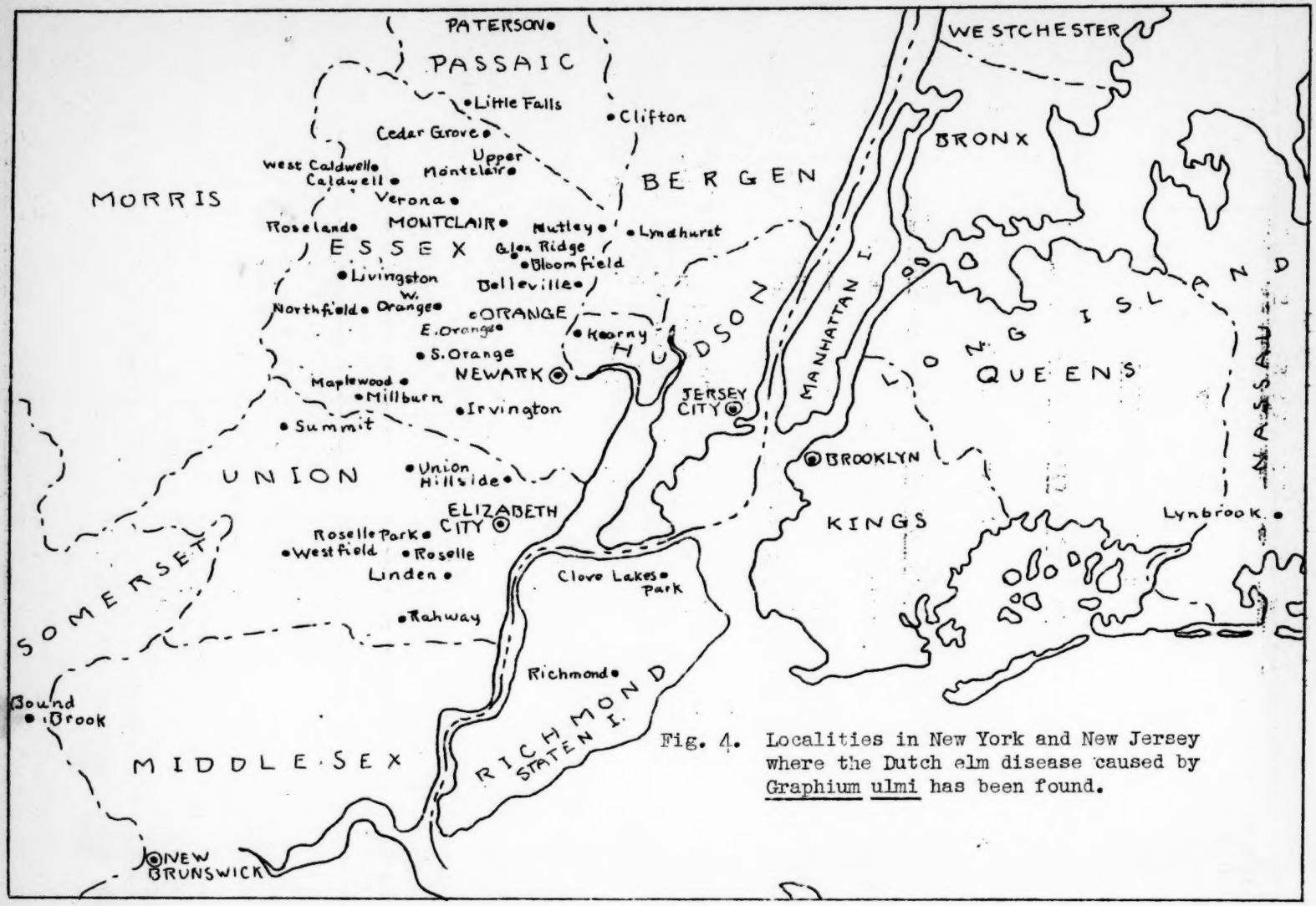

Fig. 4. Localities in New York and New Jersey where the Dutch elm disease caused by Graphium ulmi has been found.

The determinations of the fungus are all made at the Dutch Elm Disease Laboratory at Wooster, Ohio, where L. M. Fenner is acting in charge.

SPREAD AND SEVERITY OF THE DUTCH ELM DISEASE IN EUROPE

Neil E. Stevens

To rouse real enthusiasm for the Dutch Elm Disease Eradication Campaign one needs only to know what elms mean to New York and New England and to have seen what the Dutch elm disease can do in Great Britain.

In view of the fact that a large number of American plant pathologists who are watching the progress of the disease in New Jersey and New York have not had this background the following summary of observations in England may be of interest. The information is taken from an article "The Dutch Elm Disease" by T. R. Peace, Imperial Forestry Institute, Oxford, Forestry, Vol. VI, No. 2, Pages 125-142, Dec. 1932.

There is every indication that Peace is a conservative observer. He believes that the disease is not equally severe every year. In 1932, for example, it was in his opinion definitely less serious than in 1931.

Certain areas have been resurveyed, usually in September, on successive years. "A number of counts have been made along roads, every elm, other than suckers of bushes, within easy view of the road being counted..... In cases where the same length of road has been surveyed for two or more years the figures are comparable, but are subject to two sources of inaccuracy. The number of trees counted each year varies somewhat, probably to some extent according to visibility, and there is always the possibility that dead trees, counted in previous years, may have been removed."

The following table condensed from the one published by Peace on page 129 shows the percentage of dead elms in successive years on a given section of road:

Locality	Year	Dead %	Mileage of Road
Newport, Essex	1930	10	4 1/2
	1931	18	"
	1932	25	"
Audley End, Essex	1930	0	2 1/2
	1931	1	"
	1932	0	"
Buxted, Sussex	1930	11	1/4
	1931	12	"
	1932	21	"
Stansted, Essex	1931	17	1/2
	1932	33	"

The fact that the disease was not observed in England until 1927, when it was found on a few trees near London, and that this killing of elm trees has all taken place since that year, further emphasizes its destructiveness.

The disease was first noticed in Holland in 1919 and may have been present earlier. Since that time it has spread almost throughout Europe, having moved through Belgium and France to northern Italy, and through Germany to the Scandinavian Countries, Poland, Austria, and the Balkan States.

In Holland, the magnificent elm stands of ten years ago in south Limburg have practically disappeared and heavy losses have also occurred in North Brabant, according to Overdijkink in 1931. In 1928, Gallot said that there were hardly any elms left in wayside plantings in Belgium, especially in low-lying areas, and that a large number of forest trees had died recently. Van Poeteren in 1925 stated that the disease was attacking the elms in the avenues at Versailles. In 1932, Grossman, while reporting its occurrence in Switzerland, mentioned the fact that the famous avenue leading to the Grand Trianon at Versailles has had to be entirely replanted with linden trees, and that 60 to 70 per cent of the elms in the courtyard on the town side of the palace have been reduced to mere stumps.

In Germany, the disease was first observed in 1921 at Bonn. Garbers reported that by 1923 10 per cent of the elm trees in Bremen were found to be diseased and 469 trees were immediately cut down. He advocates compulsory eradication. During 1924, damage was severe and widespread in Westphalia, the Rhenish Provinces, and the Sanssouci Park at Potsdam, according to Pape. In another place, Pape states that the destruction caused by the disease was especially noticeable in the manufacturing districts of the Ruhr, where elms were planted extensively because of their resistance to smoke and gas injury. In 1931, Kaiser reported that at a meeting of the German Botanical Society the opinion was expressed that the valuable old elm stands throughout Central Europe are doomed to destruction.

Draghetti in 1932 stated that when the disease first appeared in the province of Emilia in Italy in 1929 it was found in only one district. In 1930, it occurred sporadically throughout the entire province, from 5 to 10 per cent of the trees being attacked in three localities and somewhat less than 1 per cent in the rest of the province. In 1931, there was a noticeable spread but trees still remained healthy in certain large areas, which, however, had become much smaller by 1932. Zanoni in 1932 proposes the use of other species of elms or of other trees as living supports for grapevines, to replace the elms which have been destroyed rapidly in numerous parts of Italy.

The rapid spread of the disease in Europe, and the extreme concern which it has aroused wherever it has appeared, together with the fact that informed European observers agree that the disease is more serious on the American elm than on European species, give an indication as to the eventual fate of elm trees in this country if the Dutch elm disease is not eradicated.

(Articles quoted in this note have been reviewed in various issues of the Review of Applied Mycology).

RECENT OBSERVATIONS ON EEL GRASS CONDITIONS

Clarence Cottam, Bureau of Biological Survey

The following is a summary of my observations for the Bureau of Biological Survey on the condition of eel grass (Zostera marina) made in the course of a resurvey of areas along the coasts of North Carolina and New Jersey, June 22 to 30, 1933:

NORTH CAROLINA: Some improvement is noticeable in the eel grass situation along the coast and islands of North Carolina. At Rodanthe, on Hatteras Island, eel grass was found still very scarce, but much more abundant than it had been six months previously. The eel grass was fairly well distributed, but was most evident on the borders of the shoals in 2 to 3 feet of water at low tide. Dead eel grass roots were dug up in more than 10 feet of water. There is a noticeable return of eel grass near Ayon and Frisco, Hatteras Island.

No seeds or seedlings were noted at any point on the North Carolina coast. Most of the plants were comparatively new growths from rhizomes. It was encouraging to see even small quantities of the plant being washed ashore. More drift of eel grass is now coming in than has been seen for two years.

At Ocracoke a marked scarcity of eel grass was noted in comparison with conditions prevailing a few years ago, yet it gave every indication of a favorable return. While the plant still showed some evidence of trouble, it was in much better condition than at any time since the first shortage was noted. The plants are in little clumps, widely scattered.

At Atlantic, on the mainland side of the Sound, as at other places, an encouraging improvement was noted, even though the plant was still very scarce.

The eel grass in the major portion of the Swanquarter area showed considerable improvement, yet that in one unit, Cowpens Creek and the adjoining portion of Swanquarter Bay, showed no improvement whatever, and was possibly in a slightly worse condition than when inspected in January, 1932, and January, 1933.

NEW JERSEY: The greater portion of the New Jersey coast, except perhaps at Barnegat Bay, is at present almost entirely barren of Zostera marina. In some of the bays where the growth was formerly most luxuriant, scarcely a single plant can now be found. Such is the condition at present in Grassy Bay, Great Bay, Absecon Bay, and Reeds Bay, and to a lesser extent in other bays. When I visited these areas in April an encouraging new growth was just coming on. This consisted of seedlings that had germinated last summer and all were less than 6 inches in length.

Just opposite Egg Island in Grassy Bay, I found, last April, as many as 23 apparently healthy seedlings to the square yard. An area of probably 50 acres in extent showed a good seedling growth. On my recent visit to this same area not a living eel grass plant could be found. Just across the narrow Egg Island in Great Bay from the point where the good growth of seedlings was observed in April, but where it is now entirely killed out, there was, and still is, a fairly good but very restricted growth of eel grass.

Most of the limited growth found appeared fairly healthy and was from 10 to 18 inches long. The major portion of it was from seedlings of a year ago.

The eel grass in Barnegat Bay is in better condition than three months ago. Though conditions are still serious there appears to be an encouraging improvement. The plants seem healthier and more widely distributed than when last visited. New growth from seedlings and old rhizomes was noted. In the northern portion of the bay, where the saline content of the water is lower, there is considerable drift. Some drift was noted from the Manahawkin Bridge northward.

The tremendous economic importance of eel grass (mainly indirect) and the intricate relation that it bears to other forms of aquatic life are being realized more and more as the scarcity continues.

PLANT DISEASES IN OHIO

The following notes are by A. L. Pierstorff, August 7:

APPLE: Ohio experienced one of the most severe scab (*V. inaequalis*) epidemics in history. In the Columbus area there were 26 days of rain in May and at least three prebloom sprays were necessary and in some locations four. Southern Ohio, which normally goes through with one preblossom spray required two this year. In one hundred-acre orchard in southern Ohio one short row of Delicious was not sprayed with one of the earlier preblossom sprays. There is not a single good apple on any of these trees, although they have received five sprays in all. At Columbus one grower missed three Rome Beauty trees in one of the preblossom sprays. These three trees do not have a single apple on them, while the rest of the orchard has a full crop. This is a wonderful year in which to test the efficiency of fungicides, but it was a poor year for the milder spray advocates to put on a campaign, which at least one company did. Nevertheless, there are some clean orchards in every part of the State, but they are only those of the very best growers. There are no apples in the home orchards this year. It surely was a season that put a premium on expert orchardists.

Bitter rot (*Glomerella cingulata*) is just beginning to show up and southern Ohio recently has had several rains so that there will probably be a number of reports from that section. Blotch (*Phyllosticta solitaria*) is generally not severe due to the fact that there was practically no rainfall in June at the time when the disease normally spreads.

PEACH: Curl (Exoascus deformans) was the most severe on record. In some locations growers applied a fall spray of 30 pounds of dry lime-sulfur to 100 gallons and absolutely failed to control curl. This spray was put on just after the leaves had fallen about the first of November. Of course there were a lot of growers who sprayed in the fall and obtained excellent control. Brown rot (Sclerotinia fructicola) and scab (Cladosporium carpophilum) are showing up in southern Ohio where there are some peaches. There are no peaches in central Ohio and only a few west from Cleveland. East of Cleveland along the Lake there is a full crop.

GRAPE: I think I can truthfully say that black rot (Guignardia bidwellii) is more severe than during any year that I have been in Ohio. This is true of the entire State with the exception of the area along Lake Erie, where fortunately most of our grapes are grown. In one vineyard of 15 acres in central Ohio there was a very bad case of black rot, which apparently developed very early. Most of the affected fruits have fallen and the outbreak has been checked temporarily with the aid of dry weather and of fungicides applied after the disease was first noticed. However, it emphasizes the fact that during favorable seasons an earlier spray will have to be included in the Ohio grape spray calendar.

RASPBERRIES had a very trying time this year. The plants grew until late last fall, then the temperature dropped to zero early in December. This caused a lot of winter injury. January was exceedingly mild and the plants almost started to grow, when the temperature dropped to 15 below zero in February and resulted in more winter injury. After the tops had been severely frozen, the root area was reduced by excessive rains. Finally there was a severe drought just at harvesting time. Not more than one-third of the berries were harvested and these were rubbery and brought a poor price. Of the virus diseases, streak and leaf curl are evident now, but mosaic on black caps cannot be readily distinguished at this season.

STRAWBERRY roots die just about harvesting time. In many patches the old roots of many plants were entirely dead and the plants had sent out new roots from above the crown. Of course, with the dry hot weather this resulted in much loss and many complaints. We call this black root rot. Leaf spot (Mycosphaerella fragariae) is very prevalent but we control this disease by advising growers to plant Premier.

TOMATO: Staked tomatoes look fine in both the Marietta district and in the Lake Erie area. There are practically no leaf spot diseases. Our canning crop of tomatoes are late, but will make a crop if we get some more rains. In some plants from the South I found one bad case of what appeared to be girdling with Rhizoctonia. This was present when the plants arrived. As the land was exceedingly wet at that time, the plants had been heeled in for a short while. At least 25 per cent of this particular lot are girdled in this manner. Also, there is more Fusarium wilt (F. lycopersici) in southern plants than there should be.

MELONS and CUCUMBERS look fine and leaf spot is practically absent. Bacterial wilt (Bacillus tracheiphilus) is not so prevalent as last year.

POTATO: I have never seen the Ohio potato crop look worse. The stands are ragged, due to excessive heat at planting time and to continued dry weather ever since. Yellow dwarf is showing up in a large number of samples from Michigan. At the present time it is the worst virus disease with which we have to contend. Leaf curl (virus) is not much of a factor in Ohio potatoes raised from Michigan stock.

SWEET CORN: A great deal of Stewart's disease (Aplanobacter stewartii) is showing up on all varieties of early yellow sweet corn, but the Golden Cross Bantam seems to be standing up very well and is producing some fine crops. Every good field of early sweet corn seen in northern Ohio during the past week was Golden Cross Bantam. This variety will probably be planted considerably next year.

WHEAT: Stinking smut (Tilletia spp.) has increased somewhat. Leaf rust (Puccinia triticina) had a good start on early planted wheat, but the dry weather checked it.

ORNAMENTALS have come in for their share of trouble, especially those related to drought injury. Inquiries concerning maple leaf scorch and Verticillium wilt have been abundant. Sclerotinia root rot (S. sclerotiorum) of Delphinium, Coreopsis, and Columbine, has been very plentiful. Generally speaking roses are free from leaf spot (Diplocarpon rosae) and mildew (Sphaerotheca pannosa).

PLANT DISEASES IN WISCONSIN

R. E. Vaughan has sent in the following notes on plant diseases in Wisconsin. (July 28).

WHEAT: Very little stinking smut (Tilletia tritici) reported to date. Loose smut (Ustilago tritici) more than usual but not serious except in a few fields. A 20 acre field in Grant County showed much more smut in low section of field than on high ground. Have had few requests for hot water treatment.

OATS headed out short and light because of unfavorable weather in June. Smut (Ustilago avenae and U. levis) reported as bad or more than last year. In some fields formaldehyde did not control smut. Less seed treatment than usual because of rush of spring work and no money. Stem rust (Puccinia graminis) present but not in destructive amounts.

BARLEY: Loose smut (Ustilago nuda) from 3 to 5 per cent up to 20 per cent losses in fields from untreated seed. Seed treated in 1933 with hot water shows clean to trace. Seed treated in 1932 only, shows trace to 1 per cent. Leaf spot (Helminthosporium sativum). A large amount of leaf spot on leaves and heads. Symptoms on kernels are easily confused with scab. Agar plate or blotter culture often necessary for determination. Very little scab (Gibberella saubinetii) on barley this season. A few fields in southern counties show scab. Fall plowing of corn ground and high temperatures with low humidity in June cut down infection.

PEAS: Root rots (Aphanomyces euteiches et al). Aphanomyces, Pythium, Rhizoctonia, and Fusarium associated in causing more root rot than usual. Low yields resulted from combined disease, insect and unfavorable temperature and rain. Wilt (Fusarium orthoceras pisi) was widespread in central and southern pea sections. Many fields seeded with wilt-resistant strains, went down with root rot. Where free from root rot resistance showed up well. Selection work being continued by F. J. Delwiche of the Agronomy Department.

CABBAGE: Yellows (Fusarium conglutinans) was about the same as usual. More on the outskirts of known infected areas where non-resistant plants were used. No blackleg or blackrot has been seen.

POTATO: Definite diagnosis of yellow dwarf (Virus?) on Rural New Yorker and Cobbler made by Dr. J. C. Walker. Quite prevalent in some sections of central Wisconsin.

CUCUMBER: More wilt (Bacillus tracheiphilus) than usual this summer. Bad also on squash and muskmelon. Reports from Jefferson to Polk Counties in same mail. Associated with high population of striped beetles.

TOBACCO: James Johnson reports that no survey has been made but his observations show few diseases present at this time. Owing to June dry weather few diseases developed in seed beds.

APPLE: Blight (Bacillus amylovorus) is more widespread and destructive than for several years. Highly fertilized and cultivated orchards are most affected. Relative susceptibility of varieties remains about as usual.

RASPBERRY: Anthracnose (Plectodiscella veneta). Have had several cases of bad infection on red raspberries. Associated with overhead irrigation of bushes.

GENERAL REPORTS FROM WESTERN STATES

Reports from the western States given in detail below indicate that in general plant diseases have not been unusually severe in this region. The area of unusual disease incidence during May and June is thus definitely fixed as that indicated in the August 1 Reporter.

IDAHO: I am very glad to report that conditions in Idaho are not in any way unusual and that so far we have had no reports of unusually serious epiphytotics in Idaho. Crop conditions have been very favorable throughout northern Idaho and throughout the irrigated sections of the southern part of the State. Some of the dry farming sections have suffered from the lack of moisture.

The past winter was unusually severe on fruit trees, shade trees and shrubbery in general. There have been more reports on winter killing and severe winter injury than we have had for several years.

Winter injury has also been very common with alfalfa and as usual following a severe winter we have had a considerable amount of injury from bacterial wilt (Aplanobacter insidiosum). Wilt losses are limited largely to the areas along the Snake River Valley from Cassia County located in the south-central part of the State to the Oregon line. In our plot tests in that section certain Turkestan selections have shown evidence of resistance to this disease. (C. W. Hungerford - July 24).

WASHINGTON: According to the information that has come to us and from limited field trips, we are obliged to consider that we are probably somewhat more favored than the eastern United States. One of the most frequent causes of inquiry this season is because of the rather extreme amount of winter injury to various fruit crops and herbaceous perennials in general. This extreme amount of injury has been the result of early zero weather in December. During the present growing season we have had, if anything, subnormal temperatures. This has operated to hold down many of the troubles which require higher temperatures. On the basis of reports, I believe we have much less than usual of the western blight or curly top of tomatoes and other susceptible hosts. As an illustration of our subnormal temperatures, I might note that the minimum temperature at Pullman last night was 34°. Very many of our night temperatures have been around 40° to 45° or 50°.

We have one disease in western Washington which has been causing a rather unusual amount of loss. This is the downy mildew (Peronospora viciae) of peas on the market garden varieties. We have some reports showing 35 or 40 per cent of the pods infected. (F. D. Heald - July 31).

OREGON: Coccomyces leaf spot of cherries and prunes (Coccomyces spp.). This disease of sweet and sour cherries and of prunes has been above the average in destructiveness for the last two years. Rainy weather of May and June brought on quite an outbreak in western Oregon generally. Prunes are much less severely affected than cherries.

Brown rot (Sclerotinia spp.). Blossom blight was perhaps less troublesome than usual, due to dry weather during April. Wet weather during May and June gave a chance for the disease to make considerable headway, but the coldness of the spring delayed the cherry crop and less brown rot is being noted in the sweet cherry orchards than usual at harvest time, due to the continued dry warm weather of July.

Orange rust of Rubus (Phragmidium rubi-ideae) is somewhat worse than usual on red raspberry in the Willamette Valley, doubtless due to the rains of May and June.

We have thus far had no reports of attack on pears, quinces, or other rosaceous fruits from the incense cedar rust (Gymnosporangium blasdaleanum).

Leaf spot of cane fruits due to Septoria rubi. This disease is less severe than in many years, reports S. M. Zeller.

Strawberry leaf spot (Mycosphaerella fragariae). This disease is less severe than in many years, according to S. M. Zeller.

Apple scab (Venturia inaequalis) and pear scab (V. pyrina). Apple scab is less severe than usual in western Oregon. It got a slow start, due undoubtedly to the dry April and the unusually cold temperatures of May. In the Hood River Valley, however, pear scab is showing up rather severely. The rains of May and June may be responsible.

Strawberry crinkle. Zeller thinks this virus disease is spreading faster than usual this season.

Rusts (Puccinia spp.). Cereal rusts are less abundant and severe this year than in many years. Dr. Sprague states that he has found no crown rust as yet, and very little rust in any grain in any part of the State which he has visited. Of course rust is seldom of any consequence in the average season in Oregon, as far as cereals are concerned.

Stinking smut of wheat (Tilletia spp.) is going to take the least toll from the grain growers of Oregon in several years. This is due to the fact that a great percentage of the winter wheat died out, and apparently the smutted plants in the wheat which survived may have perished due to the cold, while healthy plants in the same field survived. Therefore, there will be comparatively little damage from stinking smut throughout Oregon this year.

Hop downy mildew (Pseudoperonospora humuli) made a slow and light start due to dry weather in the early part of the spring, followed by unusually cold weather in May. June rains and rains in late May gave a sudden impetus to the disease, so that serious damage was done in many plantings before the end of June. The prevailing weather during July has been dry and warm, with the result that the mildew has been checked and little or no new infection has appeared during the month. Losses, however, will probably be as great as in previous years, or greater, depending on how the disease proceeds during the balance of the season.

Rose black spot (Diplocarpon rosae), according to F. D. Bailey, is rather more severe than usual.

Lily blight. F. P. McWhorter reports that the sequence of cold and wet weather through the spring and early summer months has given rise to severe lily blight. The organism Botrytis elliptica has damaged all kinds of lilies; in fact the measure of resistance is seen in the fact that kinds usually reasonably resistant are this year economically plagued. For example, L. regale, a seedling lily consistently free from weakening viruses has this year succumbed to Botrytis so that entire beds were destroyed. Attempted control by Bordeaux and other sprays has been futile.

Curly top (virus) is reported by B. F. Dana to be making very slow headway, much less than last year, and considerably less than the average year, because of the killing out of native host plants of the insect vector during the winter, which considerably reduced the vectors present in the eastern Oregon section this spring. (H. P. Barss - July 25).

CALIFORNIA: In general, it is my observation that our standby diseases have not been above normal and, with exceptions noted below, we have had no serious outbreaks. This is somewhat surprising as this season will be about as much below normal in temperature as 1931 was above. The severe December freeze and a delayed Spring (fruit harvested is 2 to 3 weeks late) has only in a few instances contributed to disease losses.

In one olive district (Corning) bacterial knot (Bacterium savastanoi) has caused severe damage. Most of the infection occurred in bark cracked by the freeze. Peach leaf curl (Exoascus deformans) was worse than normal. Most of the unsprayed orchards in the canning peach district have been abandoned and the trees soon die without irrigation. Apricot brown rot twig blight (Sclerotinia sp.) was particularly severe on home trees in Berkeley and Oakland. However, many unsprayed orchards in southern Alameda County suffered but little loss.

Vineyards in Tulare, Kings, and San Diego Counties lost many more vines than usual this year. The cause is very obscure but may be related to the destructive outbreaks which occurred many years ago in this State.

Powdery mildew occurred on apricots in several districts where it had at most been rare previously, but we have had no reports of trouble with mildew on peach or grapes. (C. Emlen Scott - August 4).

VEGETABLE DISEASES IN EMERGENCY GARDENS IN CONNECTICUT

The bacterial wilt of sweet corn (Aplanobacter stewartii) is very prevalent in the gardens and the loss due to this disease is in many cases 100 per cent. Since the corn crop in these gardens is so nearly a complete failure owing to the wilt, the people will be advised next year not to plant corn in cases where gardens are provided for the unemployed.

Besides the wilt disease of corn, I have found tip-burn of potato, which probably is due to a combination of factors, to be next in importance in regard to crop loss. The yield of potatoes in the majority of the unemployment gardens will be reduced over 50 per cent as compared with the yield which would be obtained if the plants were properly sprayed with Bordeaux mixture. In addition there are the usual and less frequent vegetable diseases such as the bacterial canker of tomato (Aplanobacter michiganense), bacterial wilt of cucurbits (Bacillus tracheiphilus) and Septoria leaf spot of tomato (S. lycopersici). (A. A. Dunlap - July 31).

REPORTS ON GRAPE DISEASES

In addition to those given below reports on grape diseases will be found in the Ohio report, page 121.

NEW YORK: W. D. Mills wrote on July 27 that "Considerable numbers of reports and specimens of black rot (Guignardia bidwellii) on grapes are being received particularly from the Hudson Valley. Downy mildew (Plasmopara viticola) is prevalent here in the Finger Lakes area on grapes."

Reports in the Weekly News Letter for July 31 and August 7 also indicate that black rot of grapes is important. In Orange County, according to R. Bender, "In some cases it will just about take the crop."

PENNSYLVANIA: Downy mildew is more severe than for several years. It can be found on leaves and berries of nearly every unsprayed vine. (R. S. Kirby - July 3).

OUTBREAK OF BACTERIAL BLIGHT OF BARLEY IN ILLINOIS

There was an unusual outbreak of bacterial blight of barley (Bacterium translucens) this season. The severe development of this disease was coincident with the unusual wet weather that prevailed during May. Some barley fields were nearly ruined. In the central part of the State the situation was complicated by an unusual epidemic of chinch bugs but some observations were made in the northern part of the State where chinch bugs are not a factor.

Leaves showed the characteristic brown stripes with exudate on them. In most cases this looked like varnish, and when the leaves were damp it was sticky. In addition the young plants only six or eight inches high showed an excessive accumulation of sticky exudate at the bottom of the leaves where the leaves are closely packed together and underneath the leaf sheaths. Very many of the plants died in this condition.

As typical leaf lesions occurred on the plants, it seems possible that this heavy bacterial action near the base of the young plants may have been due to the same organism, but this was not definitely established. (Benjamin Koehler - July 27).

WILLOW SCAB AND POPLAR SCAB IN PENNSYLVANIA

Specimens of both willow scab and poplar scab have been received from George L. Zundel. The poplar scab fungus, Fusicladium radiosum (Venturia tremulae) was found on Populus tremuloides in Wayne County. The willow organism, Fusicladium saliciperdum, was collected in Wayne and Sullivan Counties. Regarding the willow scab Zundel writes as follows:

"Willow scab is causing considerable damage in Sullivan County. At one spot along a river near Millview, a great number of large willows are two-thirds dead, likewise in other isolated spots practically all the willows along a small creek are rapidly being killed. With the exception of my observation of last year in Warren County, I think that the infection in Sullivan County is the most severe I have seen in the State."

MISCELLANEOUS REPORTS ON PLANT DISEASES

CLADOSPORIUM ON PEA PODS IN OREGON: Specimens and photographs of pea pods affected by Cladosporium pisi were received from Frank P. McWhorter. This seems to be the first report from Oregon. The only other record that the Survey has is from Illinois, although Cladosporium sp., perhaps the same fungus, has been reported from Washington and California.

BLIGHT OF SALSIFY: A planting of salsify in Lyon Park, Virginia, was seriously affected with the disease caused by Sporodesmium scorzonerae Aderh. This is the first time the disease had been noticed for three or four years. Collected by H. A. Allard, determined by J. A. Stevenson. This disease has only been reported a few times previously, from Virginia, West Virginia, Maryland, and Pennsylvania.

ROSE ANTHRACNOSE: Specimens of this disease caused by Sphaceloma rosarum were received during July from Maryland and Virginia. Determined by Anna E. Jenkins.

SNOWBERRY ANTHRACNOSE: Caused by Sphaceloma symphoricarpi, collected on Symphoricarpos albus laevigatus in Montgomery County, Maryland. (A. E. Jenkins - August 7).

SCAB ON PYRACANTHA: This disease caused by Fusicladium pyrinum (Lib.) Fckl. var. pyracanthae Fckl. was collected in the District of Columbia by Boin V. Timchenko, August 5. Determined by W. W. Diehl. This fungus appears to be rare in this country.

ANTHRACNOSE OF CACTUS IN NEW JERSEY: A Gloeosporium on the cactus Crassula falcata was received through the Bureau of Plant Quarantine from Hackensack, May 29. It was said to be very destructive in the affected planting. When inoculated into Crassula sp. it proved very virulent. (Thelma B. Post - July 26).

LEAF SPOT ON KERRIA: Specimens of Coccomyces kerriae Stewart on Kerria japonica were brought in by H. A. Allard from Lyon Park, Virginia. He stated the disease was so serious as to necessitate cutting out of the plants. Determined by J. A. Stevenson.

LEAF SPOT ON VIOLET: Cercospora granuliformis Ell. & Holw. on Viola papilionacea, collected by H. A. Allard, Lyon Park, Virginia, determined by J. A. Stevenson.

CONIOTHYRIUM ON ELM IN WEST VIRGINIA: Coniothyrium ulmi Tharp was collected on Siberian elm (Ulmus parvifolia) at Shepherdstown, Berkeley County, West Virginia, by E. H. Vickers, July 22. The fungus was determined by Edith K. Cash. Both the host and locality of this collection seem to be new.

CYTOSPORA ON MOUNTAIN ASH IN IDAHO: Specimens from an infected tree at Twin Falls were received from J. M. Wallace who stated that the outer parts of practically all the branches were dying. The fungus was determined by W. W. Diehl as Cytospora massariana Sacc.

XYLARIA ROOT ROT OF CHERRY IN TENNESSEE: J. O. Andes reported that he has isolated Xylaria sp. from a sour cherry tree, probably on Mahaleb root, that had been planted in a vacant space following an apple tree that had died from root rot.